DISCUSSION

DR. FREDERICK KALZ (Montreal, Quebec): We have reported a few years ago on histamine responses in atopics and found similar variations, correlated to the stage of the atopic dermatitis, to the time of the day and to psycholcgical factors and we were able to modify the responses by stress interviews. We have since measured whealing and flare response to a number of substances, including acetylcholine, epinephrine and bradykinin, in atopics as well as in hayfever sufferers and found corresponding variations. We also tested patients in a mental institution, chiefly schizophrenics, and found many who did not respond with flares. We have not been able, however, to correlate the intensity of flare reaction to the stage of mental disease, chiefly because many patients had been under treatment with various phenothiazin preparations, and these drugs alter both whealing and flare reactions.

DR. M. B. SULZBERGER (Washington, D. C.): These studies and those of Dr. Juhlin have great promise of clarifying certain findings in this most important disease, one of the most distressing diseases that dermatologists have to deal with. I want to compliment Dr. Solomon and Dr. Wentzel on this fine presentation and good study. I hope they will be able to add to their data and will soon have sufficient numbers of cases in their series to prove that there is a significant increase of norepinephrine in the skin of patients with active atopic dermatitis.

One question that I have is, does norepinephrine, when injected intracutaneously, in any dilution or in serial dilutions, produce itching?

DR. LAWRENCE M. SOLOMON (in closing): I think that Dr. Kalz's comments are extremely interesting in view of the presence of a rather large school of psychiatry and neuropharmacology that is interested in exactly this problem. (1). They believe that there may be an abnormality in the metabolism or norepinephrine both in the central nervous system and outside the central nervous system, in patients with schizophrenia, and therefore this may tie in with your findings.

The second comment is on the reaction to mecholyl. We can only refer to a paper by Burn and Rand, (2) who believe that acetylcholine may, under certain circumstances, exert paradoxical vasoconstrictive action by releasing endogenously stored norepinephrine.

Thirdly, I am sure that Dr. Sulzberger is aware of the problem of injecting norepinephrine, with the resulting necrosis of the skin at the site of injection. Therefore, extremely dilute solutions must be used. In the work that I know of in which norepinephrine has been used, there has been only one instance of norepinephrine locally injected causing pruritus. Furthermore, certain products similar to norepinephrine which are used for the relief of asthma such as ephedrine have also been known occasionally to produce itching. This may be another instance of stored norepinephrine being released. But, I don't know, however, if we can draw any conclusions from this.

1. ZELLER, E. A.: New reflections on monoamine oxidase inhibition. Ann. N. Y. Acad. Sci., **107:** Art. 3, 809, 1963.
2. BURN, J. H. AND RAND, M. J.: Noradrenaline in artery walls and its dispersal by reserpine. Brit. Med. J., **1:** 5076, 1958.